

IN THE CLAIMS:

Please cancel claims 11-20, 21, 22, 25, and 28 without prejudice or disclaimer.

Please add the following new claims 32-40:

SubD17

32. (New) A method according to claim 9, wherein said detection step comprises:

a step of determining a plurality of areas, each of which including a plurality of pixels, arranged in a direction on an image;

a step of calculating second order difference values from values each of which represents different one of the plurality of areas; and

a step of obtaining an end point of an irradiation area from the second order difference values calculated in said calculation step.

C55

33. (New) A method according to Claim 9, wherein in said evaluation step, variance of positions of end points detected in said detection step is calculated.

34. (New) A method according to Claim 9, wherein said evaluation step comprises:

a step of comparing a position of an end point detected in said detection step with a predetermined position.

35. (New) A method according to Claim 9, wherein in said evaluation step, whether positions of end points detected in said detection step are close to each other is evaluated.

36. (New) A method according to Claim 9, wherein in said detection step, image data in the object area are projected, thereby one-dimensional image data are produced, and the end point is detected based on the one-dimensional image data.

37. (New) A method according to Claim 9, wherein said evaluation step comprises:

*SubD1
Cont'd*

a step of comparing an average position of positions of end points detected in said detection step with a predetermined position.

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38. (New) A method according to Claim 37, wherein said evaluation step further comprises:

a step of calculating variance of positions of end points detected in said detection step, in accordance with a comparison result in said comparison step.

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39. (New) A method according to Claim 32, wherein in said obtaining step, the end point is obtained from the second order difference values and signs of first order difference values calculated from the values each of which represents different one of the plurality of areas.

40. (New) A method according to Claim 32, wherein in said calculation step, each of the values representing different one of the plurality of areas is obtained by smoothing pixel values in the corresponding area.

Please replace claims 1-9, 23, 24, 26, 27, 29, 30, and 31 with the following:

c56

1. (Twice Amended) An image processing method comprising:

a step of determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on an image;

a step of calculating a second order difference values from values each of which represents a different one of the plurality of areas; and

a step of obtaining an end point of an irradiation area from the second order difference values calculated in said calculation step.

c57

2. (Amended) A method according to Claim 1, further comprising a step of extracting the irradiation area from a plurality of end points obtained in said obtaining step.

*Sub D17
cont'd*

3. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is an average value of pixel values in the corresponding area.

CS7

4. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is a median value of pixel values in the corresponding area.

5. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is an average value of a limited number of pixel values in the corresponding area.

6. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is a median value of a limited number of pixel values in the corresponding area.

7. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is calculated by integrating pixel values in a direction in the corresponding area.

8. (Amended) A method according to Claim 1, wherein each of the values representing different one of the plurality of areas is obtained by smoothing pixel values in the corresponding area.

CS8

9. (Twice Amended) An image processing method comprising:
a step of detecting an end point of an irradiation area based on pixel values in an object area of an image; and
a step of evaluating a detection result in said detection step; and
a step of judging whether an irradiation area is limited in the object area based on an evaluation result in said evaluation step.

CS9

23. (Twice Amended) An image processing apparatus, comprising:

*Sub D1
Continued
CS9*

means for determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on an image;

means for calculating second order difference values from values each of which represents a different one of the plurality of areas; and

means for obtaining an end point of an irradiation area from the second order difference values calculated by said calculating means.

24. (Twice Amended) An image processing apparatus comprising:

means for detecting an end point of an irradiation area based on pixel values in an object area of an image;

means for evaluating a detection result by said detection means; and

means for judging whether an irradiation area is limited in the object area based on an evaluation result by said evaluation means.

26. (Twice Amended) A computer-readable storage medium storing a program for making a computer execute an image processing method, said method comprising:

a step of determining a plurality of areas, each of which includes a plurality of pixels, arranged in a direction on an image;

a step of calculating second order difference values from values each of which represents a different one of the plurality of areas; and

a step of obtaining an end point of an irradiation area from the second order difference values calculated in said calculating step.

27. (Twice Amended) A computer-readable storage medium storing a program for making a computer execute an image processing method, said method comprising:

a step of detecting an end point of an irradiation area based on pixel values in an object area of an image;

a step of evaluating a detection result in said detection step; and

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Sub D1
Continued*
a step of judging whether an irradiation area is limited in the object area based on an evaluation result in said evaluation step.

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29. (Amended) An apparatus for a radiographic image, comprising:
a unit adapted to determine a plurality of pixels arranged at intervals of at least two pixel pitches in a direction on a radiographic image;
a unit adapted to calculate characteristics of pixel values of the radiographic image at every successive plural pixels of the plurality of pixels; and
a unit adapted to obtain an end point of an irradiation area in the radiographic image based on the characteristics calculated by said calculation unit.

30. (Amended) A method of processing a radiographic image, comprising:
a step of determining a plurality of pixels arranged at intervals of at least two pixel pitches in a direction on a radiographic image;
a step of calculating characteristics of pixel values of the radiographic image at every successive plural pixels of the plurality of pixels; and
a step of obtaining an end point of an irradiation area in the radiographic image based on the characteristics calculated in said calculation step.

31. (Amended) A computer-readable storage medium storing a program for making a computer execute a method of processing a radiographic image, said method comprising:
a step of determining a plurality of pixels arranged at intervals of at least two pixel pitches in a direction on a radiographic image;
a step of calculating characteristics of pixel values of the radiographic image at every successive plural pixels of the plurality of pixels; and
a step of obtaining an end point of an irradiation area in the radiographic image based on the characteristics calculated in said calculation step.